WHAT IS CLAIMED IS:

1. An image forming apparatus provided with a transfer unit and a record head having a plurality of record elements arranged thereon for recording dots on a recording material, the apparatus forming an image on the recording material based on a transfer operation for making the transfer unit transfer the recording material and a move operation for making the record head travel to a direction orthogonal to a transfer direction of the recording material, the image forming apparatus comprising:

a pattern generation unit that generates a predetermined test pattern image;

a record unit that records the test pattern image generated by the pattern generation unit on the recording material transferred by the transfer unit using the record head;

an input unit which inputs a result of visual comparison between the test pattern image and a plurality of sample images prepared based on change in the transfer condition of the transfer unit; and

a correction unit that corrects the transfer condition of the transfer unit based on the comparison result received via the input unit.

2. The image forming apparatus as set forth in claim 1

wherein

the sample image is comprised of images expected to be obtained when the test pattern images generated by the pattern generation unit are recorded by the record unit under an optimal transfer condition of the transfer unit and under conditions different from the optimal transfer condition by predetermined values, and the sample image is divided into a plurality of segments per transfer condition.

3. The image forming apparatus as set forth in claim 2 wherein

a command value indicating which of the plurality of segments in the sample image the recorded test pattern image corresponds to or falls between is inputted via the input unit, and the correction unit calculates the optimal transfer condition based on the command value to correct the transfer condition.

4. The image forming apparatus as set forth in claim 3 further comprising

a nonvolatile transfer condition storage unit that stores the transfer condition, wherein

the optimal transfer condition calculated by the correction unit is stored in the transfer condition storage unit.

5. The image forming apparatus as set forth in claim 1 further comprising

a sample generation unit that generates the plurality of sample images based on the plurality of transfer conditions of the transfer unit, wherein

the record unit records the test pattern image generated by the pattern generation unit and the sample images generated by the sample generation unit on the recording materials transferred by the transfer unit using the record head.

6. The image forming apparatus as set forth in claim 5 wherein

the record unit records the sample images with limiting the record elements of the record head used for recording or records the sample images with the transfer amount of the recording material less than normal.

7. The image forming apparatus as set forth in claim 6 wherein

the record unit records the plurality of sample images on the recording material side by side in a moving direction of the record head.

8. The image forming apparatus as set forth in claim 1

wherein

the test pattern image recorded on the recording material by the record unit is composed of a first pattern image and a second pattern image which are recorded on the recording material one by one, the recording material being transferred between the recordings of two pattern images, and

the record unit records the first pattern image using a first part of the record elements of the record head, and records the second pattern image using a second part of the record elements which is different from the first part in position in the transfer direction of the recording material.

9. The image forming apparatus as set forth in claim 8 wherein

the first part and the second part correspond to respective end parts of the record elements of the record head in the transfer direction of the recording material.

10. The image forming apparatus as set forth in claim 1 wherein

the record elements of the record head eject ink drops to form dots on the recording material, and

the record control unit records the test pattern image on the recording material only when the record head is moved to one predetermined direction.

11. The image forming apparatus as set forth in claim 1 wherein

the test pattern image is an image having a pattern which varies depending on the error in the amount transferred by the transfer unit.

12. The image forming apparatus as set forth in claim 1 wherein

the transfer unit comprises an upstream transfer roller that transfers the recording material on an upstream side of the record head and a downstream transfer roller that transfers the recording material on a downstream side of the record head,

the record unit records the test pattern image in an area of the recording material in which the recording material is transferred only by the downstream transfer roller, and

the correction unit corrects the amount transferred by the downstream transfer roller.

13. The image forming apparatus as set forth in claim 12 wherein

the record unit records the test pattern image in the area in which the recording material is transferred by the upstream transfer roller, and

the correction unit comprises:

a first correction unit that corrects the transfer condition of the upstream transfer roller based on information obtained by comparing the test pattern image recorded in the area in which the recording material is transferred by the upstream transfer roller with the sample image; and.

a second correction unit that corrects the transfer condition of the downstream transfer roller based on information obtained by comparing the test pattern image recorded in the area in which the recording material is transferred by the downstream transfer roller with the sample image.

14. The image forming apparatus as set forth in claim 13 wherein

the record control unit records at least two test pattern images in different phases of at least one of the transfer rollers.

15. The image forming apparatus as set forth in claim 1 wherein

the transfer unit is a device that is driven by a drive motor and,

the transfer condition corresponds to a command value to the drive motor required for transferring the recording material by a predetermined distance.

16. The image forming apparatus as set forth in claim 15 wherein

the drive motor is a pulse motor, and the command value is a rotation pulse number of the pulse motor.

17. An image forming apparatus provided with a transfer unit and a record head having a plurality of record elements arranged thereon for recording dots on a recording material, the apparatus forming an image on the recording material based on a transfer operation for making the transfer unit transfer the recording material and a move operation for making the record head travel to a direction orthogonal to a transfer direction of the recording material, the image forming apparatus comprising:

a pattern generation unit that generates a predetermined test pattern image;

a sample generation unit that generates a plurality of sample images based on a plurality of transfer conditions of the transfer unit; and

a record unit that records the test pattern image generated by the pattern generation unit and the sample images generated by the sample generation unit on the recording material transferred by the transfer unit using the record head.

18. A correction method of transfer condition in an image forming apparatus provided with a transfer unit and a record head having a plurality of record elements arranged thereon for recording dots on a recording material, the apparatus forming an image on the recording material based on a transfer operation for making the transfer unit transfer the recording material and a move operation for making the record head travel to a direction orthogonal to a transfer direction of the recording material, the method being for correcting the transfer condition of the transfer unit,

the method comprising steps of: generating a predetermined test pattern image; recording the test pattern image generated in the pattern generation step on the recording material transferred by the transfer unit using the record head; inputting information from outside; and correcting the transfer condition of the transfer unit based on the information inputted in the input step, wherein

the transfer condition of the transfer unit is corrected in the correction step by inputting as the information a result of visual comparison between the test pattern image recorded on the recording material in the recording step and a plurality of sample images prepared based on change in the transfer condition of the transfer unit.

19. The correction method of transfer condition as set forth

in claim 18 wherein

the sample image is comprised of images expected to be obtained when the test pattern images generated by the pattern generation unit are recorded by the record unit under an optimal transfer condition of the transfer unit and under conditions different from the optimal transfer condition by predetermined values, and the sample image is divided into a plurality of segments per transfer condition.

20. The correction method of transfer condition as set forth in claim 19 wherein

the input step includes a step of inputting a command value indicating which of the plurality of segments in the sample image the recorded test pattern image corresponds to or falls between is inputted via the input unit, and

the correction step includes a step of calculating the optimal transfer condition based on the command value to correct the transfer condition.

21. The correction method of transfer condition as set forth in claim 20 further comprising a step of

storing the optimal transfer condition calculated in the correction step in the transfer condition storage unit.

22. The correction method of transfer condition as set forth

in claim 18 further comprising a step of

generating the plurality of sample images based on the plurality of transfer conditions of the transfer unit, wherein

the recording step includes a step of recording the test pattern image generated in the pattern generation step and the sample images generated in the sample generation step on the recording materials transferred by the transfer unit using the record head.

23. The correction method of transfer condition as set forth in claim 22 wherein

the sample images are recorded in the recording step with limiting the record elements of the record head used for recording or with the transfer amount of the recording material less than normal.

24. The correction method of transfer condition as set forth in claim 23 wherein

the plurality of sample images are recorded in the recording step on the recording material side by side in a moving direction of the record head.

25. The correction method of transfer condition as set forth in claim 18 wherein

the test pattern image recorded on the recording material

in the recording step is composed of a first pattern image and a second pattern image which are recorded on the recording material one by one, the recording material being transferred between the recordings of two pattern images, and

the first pattern image is recorded using a first part of the record elements of the record head, and the second pattern image is recorded using a second part of the record elements which is different from the first part in position in the transfer direction of the recording material in the recording step.

26. The correction method of transfer condition as set forth in claim 25 wherein

the first part and the second part correspond to respective end parts of the record elements of the record head in the transfer direction of the recording material.

27. The correction method of transfer condition as set forth in claim 18 wherein

the record elements of the record head eject ink drops to form dots on the recording material, and

the test pattern image is recorded in the recording step on the recording material only when the record head is moved to one predetermined direction.

28. The correction method of transfer condition as set forth

in claim 18 wherein

the test pattern image is an image having a pattern which varies depending on the error in the amount transferred by the transfer unit.

29. The correction method of transfer condition as set forth in claim 18 wherein

the transfer unit comprises an upstream transfer roller that transfers the recording material on an upstream side of the record head and a downstream transfer roller that transfers the recording material on a downstream side of the record head,

the test pattern image is recorded in the recording step in an area of the recording material in which the recording material is transferred only by the downstream transfer roller, and

the amount transferred by the downstream transfer roller is corrected in the correction step.

30. The correction method of transfer condition as set forth in claim 29 wherein

the test pattern image is recorded in the recording step in the area in which the recording material is transferred by the upstream transfer roller, and

the correction step comprises steps of:

correcting the transfer condition of the upstream transfer

roller based on information obtained by comparing the test pattern image recorded in the area in which the recording material is transferred by the upstream transfer roller with the sample image; and

correcting the transfer condition of the downstream transfer roller based on information obtained by comparing the test pattern image recorded in the area in which the recording material is transferred by the downstream transfer roller with the sample image.

31. The correction method of transfer condition as set forth in claim 30 wherein

at least two test pattern images are recorded in the recording step in different phases of at least one of the transfer rollers.